Discover What's Possible™ Anritsu

APPLICATION NOTE

MD8470A

Signalling Tester

ANRITSU CORPORATION

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MD8470A Signalling Tester Application Note

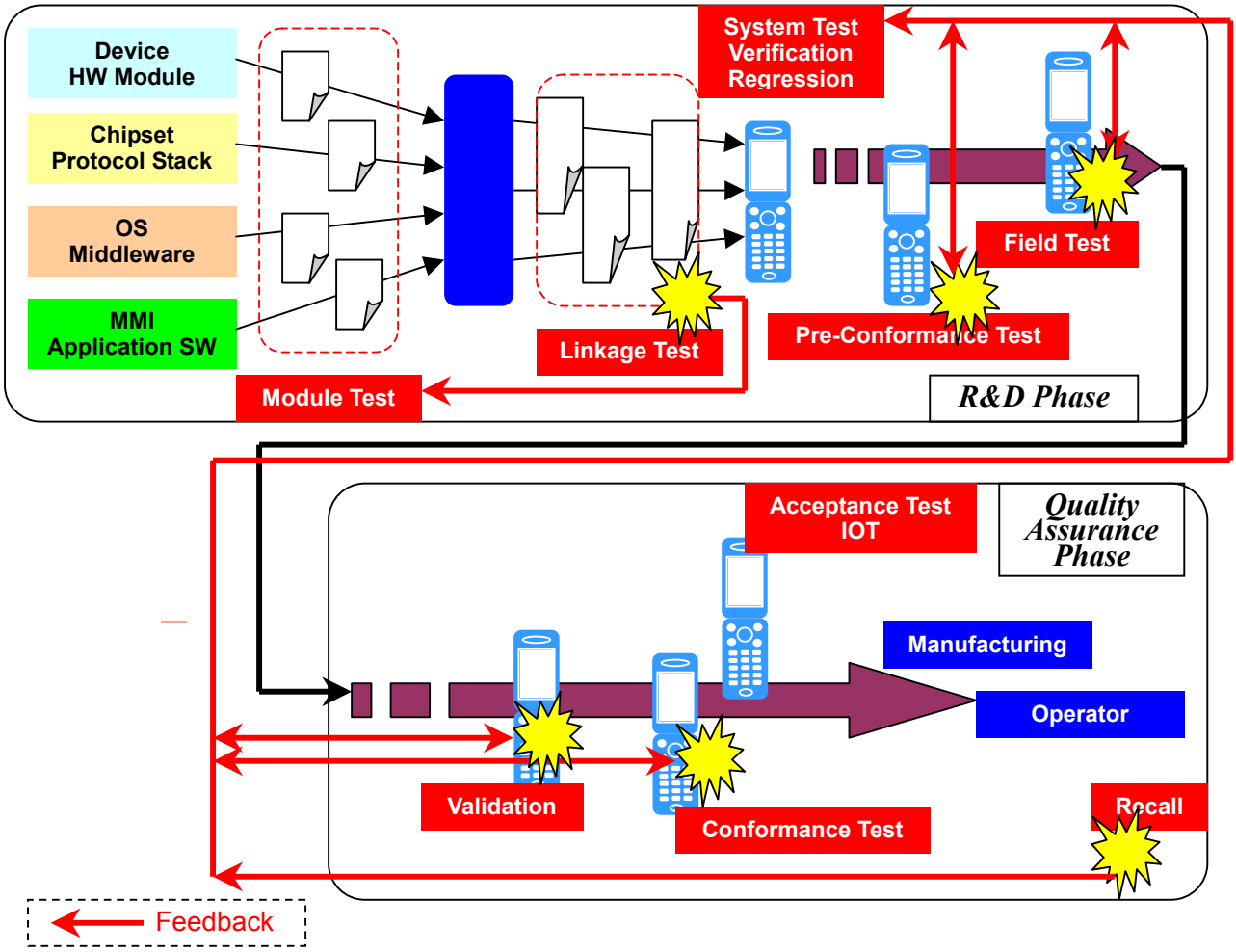
✓ Market background

As packet communication services and 3G communication systems spread globally in the mobile communications market, key factors for mobile communications business success are shifting. Fundamental communication technologies are now becoming less important than planning ability and the capability to develop attractive terminals and services. As functions and services evolve, mobile terminals are becoming information devices. This trend can be seen in terminals equipped with digital camera/TV functions or credit card transaction functions.
In keeping with the increased sophistication of mobile terminals, development and verification of application software will be more important in the future.

✓ Mobile terminal evaluation process*

*Our presumption is included.

With increasingly sophisticated mobile terminals, design and verification are becoming more complex during the designing, integration and quality assurance phases of the mobile terminal development process. Optimum mobile terminal evaluation methods need to be considered carefully in order to address issues such as increased problem debugging time and minimization of bugs generated after system tests.



✓ Targeting quality enhancement, efficient evaluation, and cost reduction

Increasing combinations of MMI and application software along with the complexity of designing and verifying the timing of event occurrence will cause difficulties in reproduction, analysis and re-verification of bugs and will increase the design complexity. Also, bugs generated in the Quality Assurance Phase may cause large financial losses, accompanied by risks of missed business opportunities. Therefore, elaboration and verification in the R&D Phase will become more important in the future.

✓ A signalling tester that realizes a high-efficiency application test: MD8470A

The standard MD8470A Signalling Tester supports basic W-CDMA and GSM/GPRS call processing. This implements the simulation environment required for application tests with simple operations. Multi-application tests and verifications of combinations of services can be implemented without creating test scenarios. Users can control the MD8470A and perform simulations by loading edited and compiled scenarios into the dedicated control software. Users can perform verifications in complex combinations and subtle timings by creating original scenarios.

✓ Able to automate tests and perform a continuous test in terminal development/verification

The MD8470A offers a DLL library that can control MX847010A software from external applications. Use of the DLL library enables external applications to control scenario/parameter loading and execution of simulations. This can be used for continuous execution and repetitive testing of multiple scenarios and for establishing automated test systems.

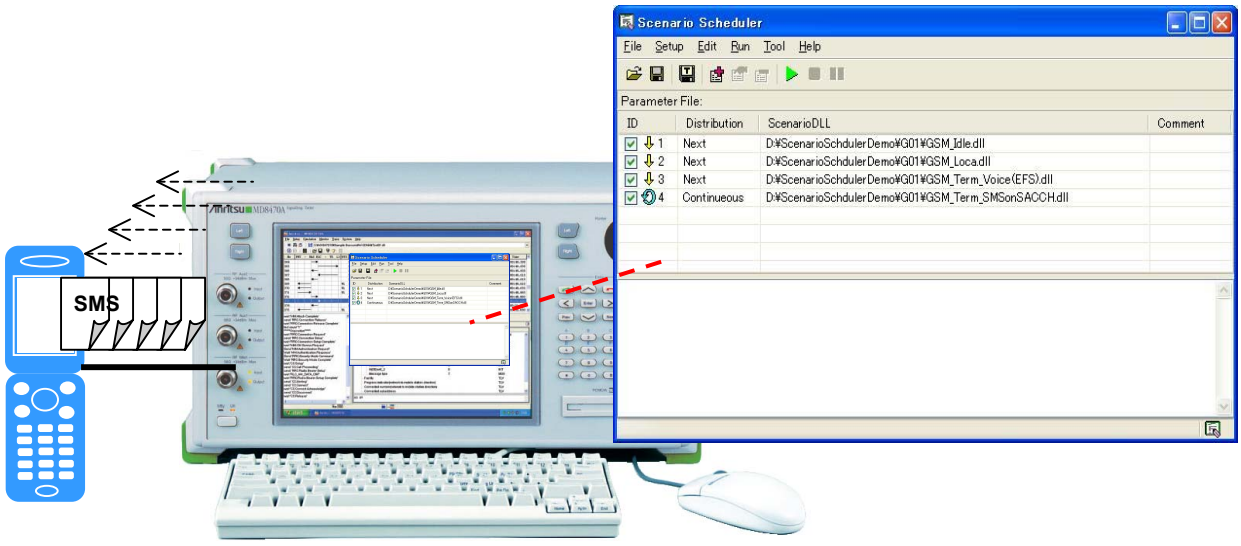
✓ Specific applications

Contributes to the quality enhancement in the mobile terminal development process

1. Verification before Field Test

Issues in Field Test (FT) can be reduced by clarifying as many bugs as possible through continuous execution of multiple scenarios and repetitive testing in the steps preceding FT. This strategy can increase feedback at the front-end experimental level as well as decrease the amount of feedback from FT to System Test.

- In the case of SMS (Short Message Service), for instance, the MD8470A continuously transmits the SMS Message to a UE with the external control function (Continues Loop). The UE keeps receiving SMS at regular intervals. Thus, a user can pre-verify the maximum SMS receive capacity and identify problems while receiving SMS before FT. Since the verifications are performed in the lab, feedback is available to the front-end process as soon as bugs are detected. For protocols where there are no real networks in the country of development, FT must be carried out in other countries. It is then very time consuming and costly to bring back many bugs and verify them. Prior detection of bugs in repetitive tests can reduce the workload in FT as well as saving time and cost.

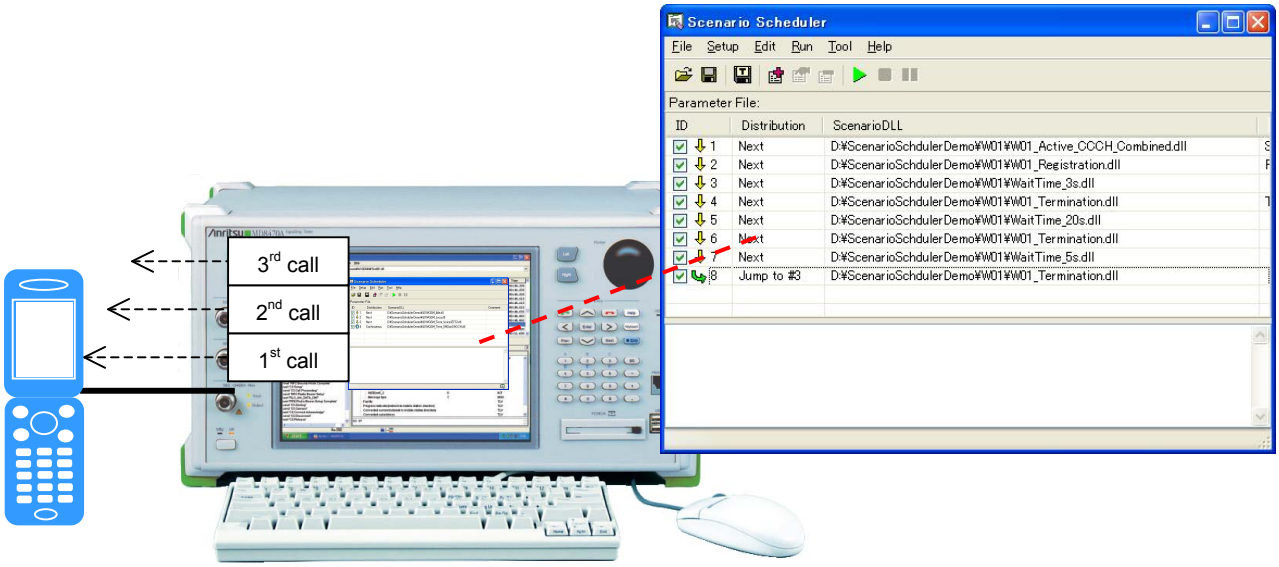


MD8470A Signalling Tester: Control by external applications

2. Variation test by multiple scenarios

Using combinations of multiple scenarios, MD8470A users can easily perform verifications of subtle timings. If bugs are found in the UE after it is shipped to the market as a commercial product, there is a huge cost to fix them. Detecting as many bugs as possible during the R&D process suppresses bugs generated in the QA process or after UE shipment, reducing financial losses.

- In the case of System Test, for instance, a UE continuously receives multiple calls. Scenarios are combined so that a 2nd call is received after the 1st call (with the 1st call on hold), and then a 3rd call is received in the same situation. Wait Time adjusts the timing for receiving these calls. Thus, automated testing by adjusting the timing of receiving calls enables the user to perform verifications of various timings. Also, using automated rather than manual testing achieves high-accuracy detection of bugs.



MD8470A Signalling Tester: Control by external applications

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